

<b>Notice of Allowability</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/612,904		WARGO ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Sing P. Chan		1734	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to an amendment filed on October 3, 2005.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. <input type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br/>Paper No./Mail Date _____</li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</li> <li>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date _____</li> <li>7. <input type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other _____</li> </ol> |
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## **DETAILED ACTION**

### ***Drawings***

1. Drawings as filed on October 3, 2005 are acceptable by the examiner.

### ***Allowable Subject Matter***

2. Claims 1-20 are allowed.
3. The following is an examiner's statement of reasons for allowance: The claims recite a method of forming high-resolution electronic circuits on a substrate. The method includes laminating an upper surface of the substrate with a layer of dielectric film. Laser drilling the upper surface of the dielectric film to form at least one channel, filling the channel with an electrically conductive material, applying a release layer to the upper surface of the dielectric film with the lower surface of the release layer is coated with an adhesive layer and adhering to the upper surface of the dielectric film, heating the substrate, the dielectric film, electrically conductive material in the channel, and the release layer to a temperature in a range of 150°C to 175°C to enhance the mechanical integrity of the conductive material within the channel and to create permanent adhesion between conductive material and the upper surface of the substrate, and removing the release layer and the dielectric film adhered to the substrate and exposing the electrically conductive material formed patterned and remained permanently on the upper surface of the substrate. Koste et al discloses a method forming metal pattern on dielectric substrates. The method includes providing a dielectric substrate, laminating a thin organic layer, preferably MYLAR, (Col 4, lines 7-9) which is polyethylene terephthalate polyester, i.e. a dielectric film (Col 4, lines 55-56), using either an electron

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beam or a laser as an energy beam source to form a plurality of holes and channels (Col 4, lines 44-54), depositing a wet metal material, i.e. conductive material, over the organic mask, i.e. the organic layer to form metallized channel and interconnection holes by rolling, wiping, and doctor blading (Col 5, lines 17-22), stripping the organic mask by peeling to remove undesired metal (Col 5, lines 39-45), and then firing according to well known techniques (Col 5, lines 46-50). Koste et al is silent as to applying a release layer with adhesive coating to the upper surface of the dielectric film and removing the release layer and the dielectric film, exposing electrically conductive material on the upper surface of the substrate and heating the substrate, the dielectric film, the electrically conductive material within the channel, and the release layer to a temperature in a range of 150°C to 175°C to enhance the mechanical integrity of the conductive material within the channel and to create permanent adhesion between conductive material and the upper surface of the substrate, and then removing the release layer and the dielectric film adhered to the substrate and exposing the electrically conductive material formed patterned and remained permanently on the upper surface of the substrate. A search of the prior arts of record did not disclose reference or references in combination with the recited features.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sing P. Chan whose telephone number is 571-272-1225. The examiner can normally be reached on Monday-Thursday 7:30AM-11:00AM and 12:00PM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher A. Fiorilla can be reached on 571-272-1187. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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